

What is claimed is:

1. A wet-type compacting method for powder characterized in that a compact is produced from a mixture of a solvent and carbide powder coated with high polymer organic substance that is substantially insoluble in the solvent.
- 5 2. A wet-type compacting method for powder according to claim 1, wherein a main component of the solvent is water.
3. A wet-type compacting method for powder according to claim 1 or claim 2, wherein a volume fraction of the powder and the high polymer organic substance in the mixture is 1 - 40 parts by volume of the high polymer organic substance to 100 parts by
10 volume of the powder.
4. A wet-type compacting method for powder according to claims 1 through 3, wherein a slurry that is the mixture is poured into a porous mold to let the mold absorb a part of the solvent, thereby producing the compact.
5. A wet-type compacting method for powder according to claims 1 through 3,
15 wherein a compacting method of producing the compact from the mixture is selected from a group consisting of extrusion molding, wet-type press molding, thixotropic molding and tape casting.
6. A wet-type compacting method for powder according to claims 1 through 5, wherein the mixture exhibits plasticity and the compact is produced by making use of
20 the plasticity.
7. A production method for a sintered powder compact characterized in that the compact obtained by the wet-type compacting method for powder according to claims 1 through 6 is dried and sintered.
8. A production method for a sintered powder compact according to claim 7,
25 wherein the high polymer organic substance exhibits a function as a sintering aid of the powder when sintered.
9. A production method for a sintered powder compact according to claim 8, wherein by performing all or a part of a sintering process in a non-oxidizing atmosphere, the high polymer organic substance is reformed to a substance which contains carbon

from the high polymer organic substance as its main component, and the substance containing the carbon as its main component exhibits a function as a sintering aid of the powder.

10. A production method for a sintered powder compact according to claims 7 through 9, wherein the powder is a non-plastic inorganic powder.
11. A production method for a sintered powder compact according to claim 10, wherein the non-plastic inorganic powder is a carbide ceramic powder.
12. A sintered powder compact obtained by the production method for a sintered powder compact according to claims 7 through 11.
- 10 13. A sintered powder compact according to claim 12, wherein the sintered powder compact contains a reformed component from part or all of the carbon of the high polymer organic substance.
14. A mixture of a solvent and a powder coated with a high polymer organic substance that is substantially insoluble in the solvent.
- 15 15. A mixture according to claim 14, wherein the mixture is used in the wet-type compacting method for powder according to claims 1 through 6 and/or the production method for a sintered powder compact according to claims 7 through 11.
16. A powder coated with a high polymer organic substance for use in the mixture according to claim 14 or claim 15.
- 20 17. A compact obtained by the wet-type compacting method of powder according to claims 1 through 6.
18. A production method for a sintered powder compact characterized in that a mixture containing a ceramic powder, a solvent and an aid as the main component thereof is a starting material, wherein in compacting and sintering processes, the aid functions as a compacting aid for providing plasticity and/or strength to a compact or its precursor in the compacting process, while, in the sintering process, the aid exhibits an effect as a sintering aid for promoting sintering.
- 25 19. A sintered powder compact produced by the production method for a sintered powder compact according to claim 18.

20. A production method for a boron carbide sintered compact comprising the steps of:

Dispersing a powder of which the main component is boron carbide of an average size of $0.3\ \mu\text{m} \sim 1.4\ \mu\text{m}$ together with a compacting aid and a sintering aid in
5 a solvent to form a slurry;

pouring the slurry into a porous mold;

letting the porous mold absorb a part of the solvent to solidify the slurry, thereby making a compact;

drying the compact; and

10 sintering the compact under atmospheric pressure and a non-oxidizing atmosphere or performing HIP treatment after the atmospheric pressure sintering under a non-oxidizing atmosphere.

21. A boron carbide sintered compact produced by the production method for a boron carbide sintered compact according to claim 20.

15 22. A mobile body device with a positioning function, wherein part or all of a movable section is constructed with the sintered powder compact according to claim 12 or claim 13 as a component.

23. A mobile body device according to claim 22, wherein a specific rigidity ratio of the sintered powder compact is 100 GPa or more.

20 24. A mobile body device according to claim 22 or claim 23, wherein the mobile body device is a hydrostatic fluid bearing device.

25. A mobile body device according to claim 24, wherein the hydrostatic fluid bearing device is used in a lithography device for forming a pattern on a tabular object.

26. A mobile body device according to claim 25, wherein the tabular object is a
25 semiconductor wafer or a liquid crystal panel.

27. A mobile body device according to claims 22 through 26, wherein part or all of the movable section constructed with the sintered powder compact according to claim 12 or claim 13 as a component is designed to have a hollow structure and/or a rib structure.

28. A mobile body device according to claim 27, wherein the hollow structure and/or the rib structure are formed by arranging molds during slip casting.
29. A mobile body device according to claim 27, wherein the hollow structure and/or the rib structure are formed by joining the compacts.
- 5 30. A mobile body device according to claim 27, wherein the hollow structure and/or the rib structure are formed by soldering the sintered compact.
31. A mobile body device according to claim 27, wherein the hollow structure and/or the rib structure are formed by processing the compact before sintering.
- 32 A hydrostatic fluid bearing device characterized in that part or all of a movable
10 section is made of material of a specific rigidity ratio of 100 GPa or more and part or all of the movable section is designed to have a hollow structure and/or a rib structure.
33. A protective member for absorbing shock from collision with a missile (a flying object) which includes the sintered powder compact according to claim 12 or claim 13 as a component.
- 15 34. A protective member for absorbing shock from collision with a missile (a flying object) which includes as a component a sintered powder compact made by slip casting and sintering of a ceramic powder.
35. A protective member for absorbing shock from collision with a missile (a flying object) according to claim 33 or claim 34, wherein the protective member further
20 includes a backup material for the sintered powder compact for absorbing shock from collision with the missile as a component.
36. A protective member for absorbing shock from collision with a missile (a flying object) according to claims 33 through 35, wherein the sintered powder compact is sandwiched by other material.
- 25 37. A device equipped with the protective member for absorbing shock from collision with a missile according to claims 33 through 36 on all or a part of its crust.
38. A device according to claim 37, wherein all or part of the crust equipped with the protective member for absorbing shock from collision with a missile (a flying object) is obliquely provided to the estimated direction of collision with the missile.

39. A device equipped with a protective member with a curved structure for absorbing shock from collision with a missile (a flying object) including as a component a ceramic sintered compact with a curved structure on all or part of its crust, wherein the protective member is provided obliquely to the estimated direction of collision with the missile.

40. A protective member with a curved structure for absorbing shock from collision with a missile (a flying object) including as a component a ceramic sintered compact with a curved structure, wherein the protective member is to be arranged in the device according to claim 39.

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